CLAIMS

Please amend the claims as follows:

Listing of Claims

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Previously Presented) A method, including

determining a first set of values for at least one parameter in a communication system, said parameters being associated with a plurality of layers of an OSI model communication system;

communicating over said communication system responsive to said first set of values;

obtaining characteristics of said communication system in response to said first set of values;

determining a second set of values for said at least one parameter by adjusting a plurality of said first set of values in conjunction in response to said characteristics; and

communicating over said communication system responsive to said second set of values;

wherein said adjusting includes adaptively calculating a newer set of said values for said communication system in response to a combination of an older set of said values and an adjusted set of said values.

5. (Previously Presented) A method, including

determining a first set of values for at least one parameter in a communication system, said parameters being associated with a plurality of layers of an OSI model communication system;

communicating over said communication system responsive to said first set of values;

obtaining characteristics of said communication system in response to said first set of values;

determining a second set of values for said at least one parameter by adjusting a plurality of said first set of values in conjunction in response to said characteristics; and

communicating over said communication system responsive to said second set of values;

wherein said adjusting includes dynamically selecting said second set of values in response to said characteristics, said second set of values including at least two changes to said at least one parameter, said second set of values having been determined to be superior to a set of altered values having only one change to said parameters.

6. (Original) A method as in claim 4, wherein said at least one parameter includes at least one of: a payload element size, a message size value, a set of acknowledgment and retransmission values, a TDD duty cycle value.

7. (Original) A method as in claim 4, wherein said at least one parameter includes at least two of: an antenna selection value, a power level value, a channel selection value, a modulation type value, a symbol rate value, an error code type value, a set of equalization values.

8. (Original) A method as in claim 4, wherein said communication system includes a plurality of distinguishable channels, said channels being distinguished using at least one of: frequency division, time division, space division, spread spectrum code division.

9. (Original) A method as in claim 4, wherein said communication system includes a plurality of distinguishable channels, said channels being distinguished using at least two of: frequency division, time division, space division, spread spectrum code division.

10. (Original) A method as in claim 4, wherein said communication system includes a wireless communication link.

11. (Original) A method as in claim 4, wherein said communication system is subject to at least one of: interference effects, multipath effects, both interference effects and multipath effects.

12. (Original) A method as in claim 4, wherein said plurality of layers include at least one of: a physical layer, a media access layer, a network layer, a transport layer, an application layer.

13. (Cancelled)

14. (Previously Presented) A method is in claim 4, wherein said combination is responsive to a hysteresis parameter.

15. (Original) A method as in claim 4, wherein said adjusting is responsive to a type of protocol being used by at least one of the group: a physical layer, a media access layer, a network layer, a transport layer, an application layer.

16. (Original) A method as in claim 15, wherein said adjusting is responsive to whether an application layer protocol includes asymmetric transfer of information.

17. (Original) A method as in claim 15, wherein said adjusting is responsive to whether an application layer protocol includes voice or video information.

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Previously Presented) A method, including

optimizing a plurality of communication parameters in a point-to-multipoint communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels; and

communicating in said point-to-multipoint communication system using said communication parameters that have been optimized;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel;

wherein said time-varying adjustment is operative to simultaneously adjust multiple ones of said plurality of communication parameters in an integrated manner so as to obtain an optimal set of said communication parameters.

36. (Original) A method as in claim 35, wherein said communication parameters include antenna allocation, power allocation, channel allocation, modulation allocation, rate allocation, error code allocation, equalization parameter allocation, payload size allocation, ARQ allocation, or TDD framing allocation.

37. (Original) A method as in claim 35, wherein said optimizing includes adjusting a plurality of said parameters; whereby an effect of adjusting one of said parameters is maximized.

38. (Original) A method as in claim 35, wherein said optimizing includes

adjusting a plurality of said parameters; whereby an effect of adjusting said parameters includes a decrease in intersymbol interference, intrasymbol interference, or transmission latency.

39. (Original) A method as in claim 35, wherein said optimizing includes selecting a set of limits for capacity and coverage of a communication system, said communication system including a base station controller and at least one customer premises equipment.

40. (Original) A method as in claim 35, wherein said optimizing includes selection with regard to optimal performance for each one of a plurality of individual communication links, in response to separate conditions for each said individual communication links, said conditions including interference conditions, multipath conditions, or combinations of interference conditions and multipath conditions.

41. (Original) A method as in claim 35, wherein said optimizing is responsive, for individual communication links, to optimal performance using an uplink path and a downlink path, said uplink path and said downlink path being operative in a duplex communication system having a base station controller and customer premises equipment.

42. (Original) A method as in claim 35, wherein said optimizing is responsive, for individual communication links, to time-bounded services, voice application services, or video application services.

43. (Previously Presented) A method as in claim 35, wherein said set plurality of communication parameters includes at least one MAC layer parameter, said at least one MAC layer parameter including payload size allocation, ARQ allocation, or TDD framing allocation.

44. (Previously Presented) A method as in claim 35, wherein said plurality of communication parameters include at least one physical layer parameter, said at least one physical layer parameter including antenna location, power allocation, channel allocation, modulation allocation, rate allocation, error coding, or equalization parameters.

45. (Cancelled)

46. (Previously Presented) A method, including

optimizing a plurality of communication parameters in a point-to-multipoint communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels; and

communicating in said point-to-multipoint communication system using said communication parameters that have been optimized;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel; and

wherein said time-varying adjustment is responsive to a set of quality of service application requirements.

47. (Previously Presented) A method including

optimizing a plurality of communication parameters in a point-to-multipoint communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels; and

communicating in said point-to-multipoint communication system using said communication parameters that have been optimized;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel; and

wherein said time-varying adjustment is responsive to a set of time delays or time variations for application service latency.

48. (Previously Presented) A method including

optimizing a plurality of communication parameters in a point-to-multipoint communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels; and

communicating in said point-to-multipoint communication system using said communication parameters that have been optimized;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel; and

wherein said time-varying adjustment for at least one of said independent communication channels is responsive to a type of application service provided over that said independent communication channel.

49. (Original) A method as in claim 35, wherein said time-varying adjustment is responsive to at least one of: intersymbol interference, intrasymbol interference, fading.

50. (Cancelled)

51. (Cancelled)

52. (Cancelled)

53. (Cancelled)

54. (Cancelled)

55. (Cancelled)

56. (Cancelled)

57. (Cancelled)

58. (Cancelled)

59. (Cancelled)

60. (Previously Presented) A device, comprising:

wireless communication equipment for a communication system;

a processor that executes instructions to control communication over said communication system; and

memory that stores information including said instructions, the instructions including the steps of: (a) determining a first set of values for at least one parameter in said communication system, said parameters being associated with a plurality of layers of an OSI model communication system, (b) communicating over said communication system responsive to said first set of values, (c)

obtaining characteristics of said communication system in response to said first set of values, (d) determining a second set of values for said at least one parameter by adjusting a plurality of said first set of values in conjunction in response to said characteristics, and (e) communicating over said communication system responsive to said second set of values;

wherein said adjusting includes adaptively calculating a newer set of said values for said communication system in response to a combination of an older set of said values and an adjusted set of said values.

61. (Previously Presented) A device, comprising:

wireless communication equipment for a communication system;

a processor that executes instructions to control communication over said communication system; and

memory that stores information including said instructions, the instructions including the steps of:

(a) determining a first set of values for at least one parameter in said communication system, said parameters being associated with a plurality of layers of an OSI model communication system, (b) communicating over said communication system responsive to said first set of values, (c) obtaining characteristics of said communication system in response to said first set of values, (d) determining a second set of values for said at least one parameter by adjusting a plurality of said first set of values in conjunction in response to said characteristics, and (e) communicating over said communication system responsive to said second set of values;

wherein said adjusting includes dynamically selecting said second set of values in response to said characteristics, said second set of values including at least two changes to said at least one parameter, said second set of values having been determined to be superior to a set of altered values having only one change to said parameters.

62. (Previously Presented) A device as in claim 60, wherein said parameters includes at least one of: a payload element size, a message size value, a set of acknowledgment and retransmission values, a TDD duty cycle value.

63. (Previously Presented) A device as in claim 60, wherein said at least one parameter includes at least two of: an antenna selection value, a power level value, a channel selection value, a modulation type value, a symbol rate value, an error code type value, a set of equalization values.

64. (Previously Presented) A device as in claim 60, wherein said communication system includes a plurality of distinguishable channels, said channels being distinguished using at least one of: frequency division, time division, space division, spread spectrum code division.

65. (Previously Presented) A device as in claim 60, wherein said communication system includes a plurality of distinguishable channels, said channels being distinguished using at least two of: frequency division, time division, space division, spread spectrum code division.

66. (Previously Presented) A device as in claim 60, wherein said communication system includes a wireless communication link.

67. (Previously Presented) A device as in claim 60, wherein said communication system is subject to at least one of: interference effects, multipath effects, both interference effects and multipath effects.

68. (Previously Presented) A device as in claim 60, wherein said plurality of layers include at least one of: a physical layer, a media access layer, a network layer, a transport layer, an application layer.

69. (Cancelled)

70. (Previously Presented) A device as in claim 60, wherein said combination is responsive to a hysteresis parameter.

71. (Previously Presented) A device as in claim 60, wherein said adjusting is responsive to a type of protocol being used by at least one of the group: a physical layer, a media access layer, a network layer, a transport layer, an application layer.

72. (Previously Presented) A device as in claim 71, wherein said adjusting is responsive to whether an application layer protocol includes asymmetric transfer of information.

73. (Previously Presented) A device as in claim 71, wherein said adjusting is responsive to whether an application layer protocol includes voice or video information.

74. (Previously Presented) A device, comprising:

wireless communication equipment for a point-to-multipoint communication system;

a processor that executes instructions to control communication over said communication system; and

memory that stores information including said instructions, the instructions including the steps of optimizing a plurality of communication parameters in said communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel;

wherein said time-varying adjustment is operative to simultaneously adjust multiple ones of said plurality of communication parameters in an integrated manner so as to obtain an optimal set of said communication parameters; and

wherein said optimizing includes selecting a set of limits for capacity and coverage of a communication system, said communication system including a base station controller and at least one customer premises equipment.

75. (Previously Presented) A device as in claim 74, wherein said communication parameters include antenna allocation, power allocation, channel allocation, modulation allocation, rate allocation, error code allocation, equalization parameter allocation, payload size allocation, ARQ allocation, or TDD framing allocation.

76. (Previously Presented) A device as in claim 74, wherein said optimizing includes adjusting a plurality of said parameters; whereby an effect of adjusting one or said parameters is maximized.

77. (Previously Presented) A device as in claim 74, wherein said optimizing includes adjusting a plurality of said parameters; whereby an effect of adjusting said parameters includes a decrease in intersymbol interference, intrasymbol interference, or transmission latency.

78. (Cancelled)

79. (Previously Presented) A device, comprising:

wireless communication equipment for a point-to-multipoint communication system;

a processor that executes instructions to control communication over said communication system; and

memory that stores information including said instructions, the instructions including the steps of optimizing a plurality of communication parameters in said communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel;

wherein said time-varying adjustment is operative to simultaneously adjust multiple ones of said plurality of communication parameters in an integrated manner so as to obtain an optimal set of said communication parameters; and

wherein said optimizing includes selection with regard to optimal performance for each one of a plurality of individual communication links, in response to separate conditions for each

said individual communication links, said conditions including interference conditions, multipath conditions, or combinations of interference conditions and multipath conditions.

80. (Previously Presented) A device as in claim 79, wherein said optimizing is responsive, for individual communication links, to optimal performance using an uplink path and a downlink path, said uplink path and said downlink path being operative in a duplex communication system having a base station controller and customer premises equipment.

81. (Previously Presented) A device as in claim 79, wherein said optimizing is responsive, for individual communication links, to time-bounded services, voice application services, or video application services.

82. (Previously Presented) A device as in claim 79, wherein said plurality of communication parameters in clued at least one MAC layer parameter, said at least one MAC layer parameter including payload size allocation, ARQ allocation, or TDD framing allocation.

83. (Previously Presented) A device as in claim 79, wherein said plurality of communication parameters include at least one physical layer parameter, said at least one physical layer parameter including antenna location, power allocation, channel allocation, modulation allocation, rate allocation, error coding, or equalization parameters.

84. (Cancelled)

85. (Previously Presented) A device, comprising:

wireless communication equipment for a point-to-multipoint communication system;

a processor that executes instructions to control communication over said communication system; and

memory that stores information including said instructions, the instructions including the steps of optimizing a plurality of communication parameters in said communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel; and

wherein said time-varying adjustment is responsive to a set of quality of service application requirements.

86. (Previously Presented) A device, comprising:

wireless communication equipment for a point-to-multipoint communication system;

a processor that executes instructions to control communication over said communication system; and

memory that stores information including said instructions, the instructions including the steps of optimizing a plurality of communication parameters in said communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel; and

wherein said time-varying adjustment is responsive to a set of time delays or time variations for application service latency.

87. (Previously Presented) A device, comprising:

wireless communication equipment for a point-to-multipoint communication system;

a processor that executes instructions to control communication over said communication system; and

memory that stores information including said instructions, the instructions including the steps of optimizing a plurality of communication parameters in said communication system, said optimization including time-varying adjustment of said plurality of communication parameters for a set of independent communication channels in said communication system, said time-varying adjustment being responsive to at least one of statistical or time-varying aspects of each independent communication channel of said set of independent communication channels;

wherein said time-varying adjustment is independent with regard to each said independent communication channel;

wherein said communication parameters are effective to alter aspects of each said independent communication channel with regard to frequency-variation, spatial-variation, or time-variation of each said independent communication channel; and

wherein said time-varying adjustment for at least one of said independent communication channels is responsive to a type of application service provided over that said independent communication channel.

88. (Cancelled)

89. (Cancelled)

90. (Cancelled)

91. (Cancelled)

92. (Cancelled)

93. (Cancelled)

94. (Cancelled)

95. (Cancelled)

96. (Cancelled)

97. (Cancelled)